

# (12) UK Patent Application (19) GB (11) 2 191 809 (13) A

(43) Application published 23 Dec 1987

(21) Application No 8714330

(22) Date of filing 18 Jun 1987

(30) Priority data

(31) 8615072

(32) 20 Jun 1986

(33) GB

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(51) INT CL<sup>4</sup>

E06B 3/58

(52) Domestic classification (Edition I):

E1R 26B2B 26B5A

(56) Documents cited

GB 1545189

GB 1396033

US 3872638

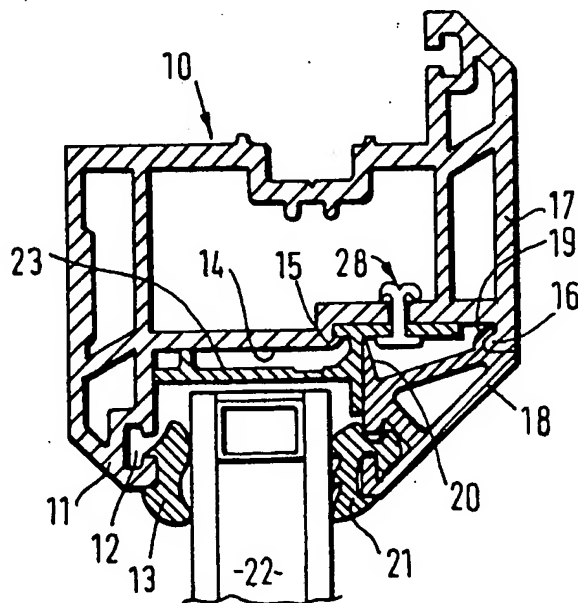
(58) Field of search

E1R

Selected US specifications from IPC sub-class E06B

## (54) Window

(57) A window assembly including a frame member 10 and a glazing panel 22 held in the required position therein by a removable glazing bead 18 and gaskets 13, 21, wherein there is provided a retention member 23 secured to the frame member by rivet 38 and including a depending wall portion (27, Fig. 2 not shown) for retaining the glazing panel when the glazing bead is removed and further comprising a portion 26 for positioning the glazing panel in the frame. The retention member is concealed by the glazing bead when the latter is fitted, and provides increased security against unauthorised access to a building by removal of the glazing bead.



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The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

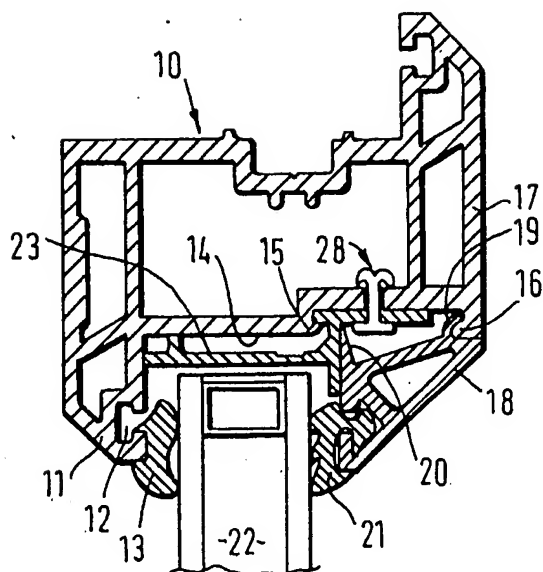


FIG. 1.

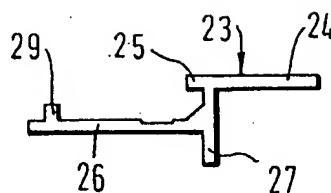


FIG. 2.

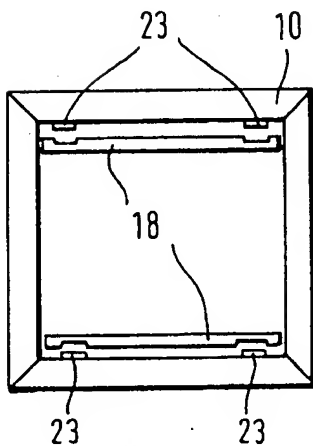


FIG. 3.

## SPECIFICATION

## Window assembly

5 This invention relates to a window frame assembly including a frame member and a glazing panel (e.g. a sealed double glazed unit) occupying a recess in the frame member and held therein by a removable glazing bead member.

10 In such a window assembly as generally known hitherto, the glazing panel is free to be removed from the window frame when all the glazing bead members of the surrounding frame members are removed. If the glazing bead members are removed, for example, for maintenance purposes, it can be inconvenient to have to hold the glazing panel in place, to prevent it falling. Further, there is a potential security risk in that removal of the glazing beads, if they are provided at the external side of the window, followed by the panel presents an opportunity for unauthorised access to a building.

15 It has been proposed that one or more shaped elements can be provided, secured to the frame member and having a retaining limb which extends upwardly in such a way as to retain the glazed panel in the window even when the glazing bead has been removed. If such elements are rivetted to the frame member, a degree of security is provided since the elements cannot be removed without special tools, or at least without breaking or damaging them in such a way as would take time and/or make noise to draw attention to any such operation. However, it is usual to provide spacing or packing members between the edges of the glazing panel and the frame members in which it is received, and the removal of such spacing or packing members (which is usually possible after removal of the glazing bead members) may still leave sufficient room for the glazing panel to be manoeuvred out of place even if such security elements are present.

20 It is the object of the present invention to provide improved security in a window assembly.

25 The present invention provides a window frame assembly comprising a frame member, a glazing panel occupying a recess in the frame member, and a removable glazing bead member engaging the frame member and holding the glazing panel in the frame member recess, wherein there is provided a retention member secured to the frame member and comprising a portion fitting between the edge of the glazing panel and the frame member for positioning the panel relative to the frame member in the general plane of the panel, and a portion engagable with a face of the panel to retain it to the frame member when the glazing bead member is removed, the retention member being concealed by the glazing

bead member when the latter is fitted.

In a window assembly according to the invention, the glazing panel is retained by the retention member or members even when the glazing bead member is removed. Because the retention member has a portion which acts as a spacer or packer to position the glazing panel relative to the frame member in the general plane of the panel, the possibility of removing the glazed panel by manoeuvring it after displacing separate spacers or packers does not exist. Thus improved security is obtained. Because the retention member is concealed by the glazing bead member when the latter is fitted, the appearance of the window assembly is unaltered.

Preferably a number of retention members are provided, at spaced intervals along the frame member. In a typical window assembly, as described hereafter, two opposed frame members with removable glazing beads may be provided with retention members, this being sufficient to retain the glazing panel when the glazing bead members are removed.

The glazing bead member may be recessed at the spaced intervals to accommodate the retention members. In a typical window frame assembly, the glazing bead member may have to be recessed or cut away at spaced intervals for drainage purposes, and therefore such expedients to accommodate the retention members do not significantly add to the time and expense of window manufacture.

Preferably each retention member is retained by a fastening which is not readily removable, e.g. a blind rivet or rivets.

The invention will now be described by way of example with reference to the accompanying drawings, of which:

Figure 1 is a section through a frame member and associated parts of a window assembly according to the invention;

Figure 2 is a section through the retention member of the assembly;

Figure 3 is a diagrammatic view showing where retention members would be fitted in a typical window assembly according to the invention.

Referring firstly to Figure 1 of the drawings, there is shown a frame member 10 which is an extrusion of a plastics material such as UPVC which is substantially rigid. The section of the frame is hollow including a number of chambers or spaces, and is a typical example of a frame member which is used for manufacture of the frame of a window sash pivotally openable relative to a surrounding fixed frame. The frame member includes a rear wall portion 11 having an undercut recess 12 with which a wedge gasket 13 is engagable, and a forwardly extending surface 14 leading to an undercut recess defined between a projection 15 and a projection 16 terminating a front wall 17 of the frame member. Wall portion 11 and surface 14 together provide a recess for

receiving a glazing panel 22.

The undercut recess defined between projections 15, 16 provides for a glazing bead member 18 to be removably fitted to the frame member. The glazing bead member 18 has a foot 19 which engages behind projection 16, and a limb 20 terminating in a foot which engages behind projection 15. The glazing bead member carries a captive gasket 21. The frame member and glazing bead member hold the glazing panel 22, illustrated as a sealed double glazed panel, therebetween. In a conventional method of manufacturing the window assembly, the glazing panel 22 would be placed in the required position after which the glazing bead member 18, with its captive gasket 21, is engaged with the frame member, firstly by its limb 20 entering the undercut recess adjacent projection 15 and thereafter by its foot 19 being engaged behind projection 16, this being facilitated by the resilience of the plastics material of the glazing bead member which permits deflection of limb 20. Alternatively foot 19 may be engaged behind projection 16, followed by limb 20 being engaged with projection 15. Thereafter wedge gasket 13 would be fitted between wall 12 of the frame member and the panel 22, to take up clearances and ensure that the panel 22 is firmly held in the required position relative to the frame assembly.

It will be appreciated that, as described thus far, if the glazing bead member 18 is removed there is nothing to prevent the glazing panel 22 from being removed from the window assembly. Unauthorised removal of the glazing bead member may be possible, by virtue of the resilience of the material.

The invention therefore provides frame members of the window with a number of retention members 23 as shown in Figure 2. Each retention member comprises a portion 24 which lies within the recess defined between projections 15, 16; with a heel 25 which engages behind projection 15. The retention member further comprises a portion 26 which extends parallel to, but spaced therefrom by a lug 29, surface 14 of the frame member, and a wall formation 27 which, as will be seen from Figure 1, is engageable with the face of the panel 22 to prevent removal of the panel 22 from the frame member. The retention member is secured by a fastening such as a blind rivet 28 extending through a hole drilled through the retention member and frame member. The portion 26 of the retaining member acts as a spacer or packer to position the panel 22 relative to the frame member in the general plane of the panel. It will be appreciated that in the case of the frame member at the bottom of the window, glazing panel 22 will rest on portion 26 of the retention member. In any event, portion 26 of the retaining member denies the glazing panel sufficient freedom of movement

to be manoeuvred past wall formation 27 of the retaining member.

In a typical window assembly, as shown in Figure 3, two spaced retention members 23 would be provided along each of a pair of opposed frame members of an assembly. Limbs 20 of the respective associated glazing bead members 18 would be cut away at the appropriate spaced positions, to accommodate the retention members. Since glazing bead members usually require to be thus cut away at spaced positions for drainage purposes, no additional provision has to be made for accommodating the retention members.

Individual retention members may be cut from an extrusion of material, e.g. an aluminium alloy, of the appropriate cross-sectional shape. Each retention member may be sufficiently short in the direction lengthwise of the frame member to enable it to be fitted by being placed in the frame member with portion 23 extending along the frame member, and then turning the retention member through 90 degrees about an axis parallel to the general plane of the glazing panel (e.g. the axis of the hole for rivet 28) to reach the illustrated position. Rivet 28 can then be applied.

Four retention members disposed as shown in Figure 3, or possibly even fewer retention members, are sufficient to retain the glazing panel against unauthorised removal. If the retention members are held to the frame members by fasteners which are not readily removable (blind rivets as shown have to be drilled out to be removed, which is time consuming and noisy) a high degree of security against unauthorised entry to a building by way of the window is provided. Additionally, as above referred to, the glazing panel is correctly positioned in the frame and is held in place so as not to fall out if for any reason the glazing beads should need to be removed.

It will be appreciated that the invention is applicable to retaining the glazing panel of a fixed light, just as for the openable sash above described. Indeed, it may be applicable to panels other than transparent or translucent glazing panels if they are fitted in analogous manner, and the term "glazing panel" is intended to include any such panel fitted in such manner.

#### CLAIMS

1. A window frame assembly comprising a frame member, a glazing panel occupying a recess in the frame member, and a removable glazing bead member engaging the frame member and holding the glazing panel in the frame member recess, wherein there is provided a retention member secured to the frame member and comprising a portion fitting between the edge of the glazing panel and the frame member for positioning the panel relative to the frame member in the general plane of the panel, and a portion engageable with a

face of the panel to retain it to the frame member when the glazing bead member is removed, the retention member being concealed by the glazing bead member when the latter is fitted.

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2. A window frame assembly according to Claim 1 wherein a number of retention members are provided, at spaced intervals along said frame member.
- 10 3. A window frame assembly according to Claim 2 wherein the glazing bead member is recessed at said spaced intervals to accommodate the retention members.
- 15 4. A window frame assembly according to any one of the preceding claims wherein the or each retention member is secured by a fastening which is not readily removable.
- 20 5. A window frame assembly substantially as hereinbefore described with reference to the accompanying drawings.

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Printed for Her Majesty's Stationery Office  
by Burgess & Son (Abingdon) Ltd, Dd 8991885, 1987.  
Published at The Patent Office, 25 Southampton Buildings,  
London; WC2A 1AY, from which copies may be obtained.